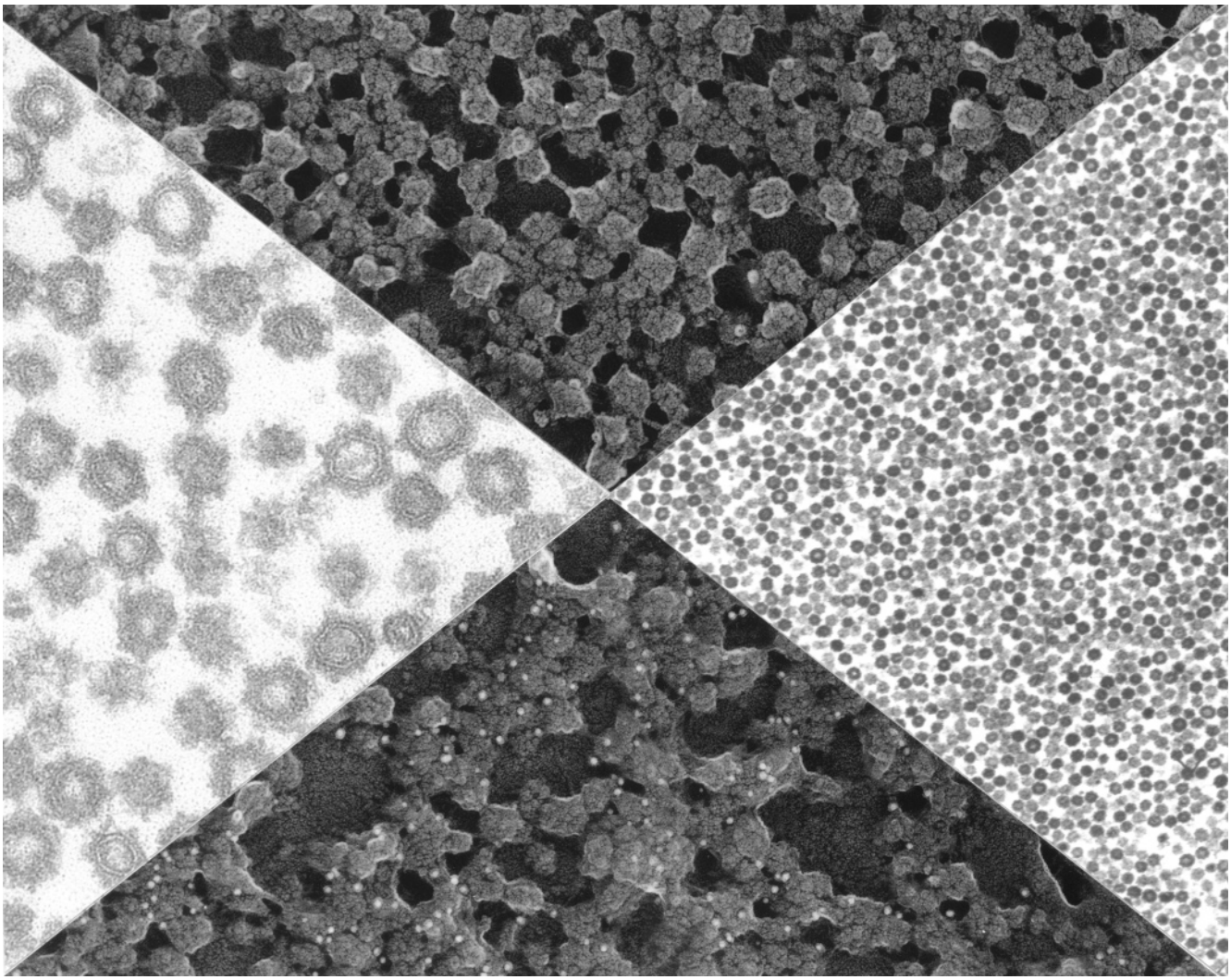
Biology in pictures

Transports of delight



The pictures above are of purified intracellular transport vesicles. Each has a 'COP II' membrane coat made up of Sec proteins (first identified for their function in secretion from yeast cells). The vesicles transport secretory and membrane proteins from the endoplasmic reticulum to the Golgi complex in yeast, and homologous COP II components have been identified in plants and in mammalian cells.

The vesicles shown here were isolated from yeast endoplasmic reticulum membranes to which purified COP II components were added, to promote budding. Identical vesicles can be budded from the yeast nuclear envelope, a source of 'pure' endoplasmic reticulum.

Two of the views (left and right) are conventional thin sections, with the low-power shot revealing the purity of the preparations. The other two (top and bottom) are quick-frozen deep-etch replicas, revealing the surface structure of the COP II coat. In the bottom image, one coat component has been immunolabelled with gold particles, which appear as white dots.

The pictures were supplied by Dr Lelio Orci, Department of Morphology, University of Geneva Medical School, Geneva, Switzerland. The work is described in papers by C. Barlowe, L. Orci, T. Yeung, M. Hosobuchi, S. Hamamoto, N. Salama, M. Rexach, M. Ravazzola, M. Amherdt, and R. Schekman, *Cell* 1994, **77:**895–907; and by S.Y. Bednarek, M. Ravazzola, M. Hosobuchi, M. Amherdt, A. Perrelet, R. Schekman and L. Orci, *Cell* 1995, **83:**1183–1196.